

LDJRR/LDWSF
4.8.7
09/17/2015



Analytical Resources, Incorporated
Analytical Chemists and Consultants

17 September 2015

Dee Gardner
Sound Earth Strategies, Inc.
2811 Fairview Avenue East, Suite 2000
Seattle, WA 98102

RE: JFOS3
ARI Job No.: AMN4

Dear Dee:

Please find enclosed the original chain of custody record and the final results for the samples from the project referenced above. Analytical Resources, Inc. received two soil samples on September 16, 2015. The samples were analyzed for PCBs as requested.

These analyses proceeded without incident of note.

If you have any questions regarding these results, please feel free to contact me at your convenience.

Sincerely,

ANALYTICAL RESOURCES, INC.

Mark D. Harris
Mark D. Harris
Project Manager
206/695-6210
markh@arilabs.com

cc: Miles Dyer, Jorgensen Forge
file AMN4

Enclosures

USEPA SF



1500279

Chain of Custody Record & Laboratory Analysis Request

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)
www.arilabs.com



ARI Assigned Number: AMNY	Turn-around Requested: 24 HOURS
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Page: | of |

ARI Client Company: Phone: JØRGENSEN FORGE 206.762.1100

Date: 9/15/16 Ice Present? Yes

Client Contact: MILES DYER

No. of Coolers: 1 Cooler Temps: 4-1

Client Project Name: JEOSZ

Client Project #: Samplers: J. LOEFFLER

182 May

Comments/Special Instructions CC: DEE GARDNER AT SOUNDEARTH dgardner@soundearth inc.com	Relinquished by: (Signature) 	Received by: (Signature) 	Relinquished by: (Signature)	Received by: (Signature)
Printed Name:	Printed Name:	Printed Name:	Printed Name:	Printed Name:
Company:	Company:	Company:	Company:	Company:
Date & Time: 9/16/15 @ 08:38	Date & Time: 9/16/15 08:38	Date & Time:	Date & Time:	

Limits of Liability: ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, notwithstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.



Analytical Resources, Incorporated
Analytical Chemists and Consultants

ARI Client: Jorgenson Forge

COC No(s): _____ NA

Assigned ARI Job No: AMNY

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of to cooler? YES NO

Were custody papers included with the cooler? YES NO

Were custody papers properly filled out (ink, signed, etc.) YES NO

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry)

Time: _____

4.1

Temp Gun ID#: D22565

If cooler temperature is out of compliance fill out form 00070F

Cooler Accepted by: CA Date: 9-16-15 Time: 0838

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler? YES NO

What kind of packing material was used? ... Bubble Wrap Wet Ice Gel Packs Baggies Foam Block Paper Other: _____

Was sufficient ice used (if appropriate)? NA YES NO

Were all bottles sealed in individual plastic bags? YES NO

Did all bottles arrive in good condition (unbroken)? YES NO

Were all bottle labels complete and legible? YES NO

Did the number of containers listed on COC match with the number of containers received? YES NO

Did all bottle labels and tags agree with custody papers? YES NO

Were all bottles used correct for the requested analyses? YES NO

Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs)... NA YES NO

Were all VOC vials free of air bubbles? NA YES NO

Was sufficient amount of sample sent in each bottle? NA YES NO

Date VOC Trip Blank was made at ARI... NA YES NO

Was Sample Split by ARI : NA YES Date/Time: _____ Equipment: _____ Split by: _____

Samples Logged by: CA Date: 9-16-15 Time: 0928

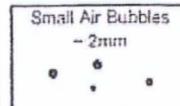
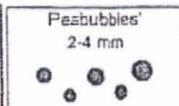
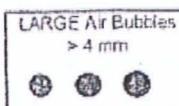
** Notify Project Manager of discrepancies or concerns **

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

By:

Date:

Small Air Bubbles ~ 2mm 	Peabubbles' 2-4 mm 	LARGE Air Bubbles > 4 mm 	Small → "sm" (< 2 mm) Peabubbles → "pb" (2 to < 4 mm) Large → "lg" (4 to < 6 mm) Headspace → "hs" (> 6 mm)

Sample ID Cross Reference Report

ARI Job No: AMN4
Client: Jorgensen Forge
Project Event: N/A
Project Name: JFOS3

Sample ID	ARI Lab ID	ARI LIMS ID	Matrix	Sample Date/Time	VTSR
1. CMP12-B08-1+06	AMN4A	15-16384	Soil	09/15/15 15:15	09/16/15 08:38
2. CMP24-B09-1+05	AMN4B	15-16385	Soil	09/15/15 15:20	09/16/15 08:38



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Consultants

Data Reporting Qualifiers

Effective 12/31/13

Inorganic Data

- U Indicates that the target analyte was not detected at the reported concentration
- * Duplicate RPD is not within established control limits
- B Reported value is less than the CRDL but \geq the Reporting Limit
- N Matrix Spike recovery not within established control limits
- NA Not Applicable, analyte not spiked
- H The natural concentration of the spiked element is so much greater than the concentration spiked that an accurate determination of spike recovery is not possible
- L Analyte concentration is \leq 5 times the Reporting Limit and the replicate control limit defaults to ± 1 RL instead of the normal 20% RPD

Organic Data

- U Indicates that the target analyte was not detected at the reported concentration
- * Flagged value is not within established control limits
- B Analyte detected in an associated Method Blank at a concentration greater than one-half of ARI's Reporting Limit or 5% of the regulatory limit or 5% of the analyte concentration in the sample.
- J Estimated concentration when the value is less than ARI's established reporting limits
- D The spiked compound was not detected due to sample extract dilution
- E Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.



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- Q Indicates a detected analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20%Drift or minimum RRF).
- S Indicates an analyte response that has saturated the detector. The calculated concentration is not valid; a dilution is required to obtain valid quantification of the analyte
- NA The flagged analyte was not analyzed for
- NR Spiked compound recovery is not reported due to chromatographic interference
- NS The flagged analyte was not spiked into the sample
- M Estimated value for an analyte detected and confirmed by an analyst but with low spectral match parameters. This flag is used only for GC-MS analyses
- N The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification"
- Y The analyte is not detected at or above the reported concentration. The reporting limit is raised due to chromatographic interference. The Y flag is equivalent to the U flag with a raised reporting limit.
- EMPC Estimated Maximum Possible Concentration (EMPC) defined in EPA Statement of Work DLM02.2 as a value "calculated for 2,3,7,8-substituted isomers for which the quantitation and /or confirmation ion(s) has signal to noise in excess of 2.5, but does not meet identification criteria" (**Dioxin/Furan analysis only**)
- C The analyte was positively identified on only one of two chromatographic columns. Chromatographic interference prevented a positive identification on the second column
- P The analyte was detected on both chromatographic columns but the quantified values differ by ≥40% RPD with no obvious chromatographic interference
- X Analyte signal includes interference from polychlorinated diphenyl ethers. (**Dioxin/Furan analysis only**)
- Z Analyte signal includes interference from the sample matrix or perfluorokerosene ions. (**Dioxin/Furan analysis only**)



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Geotechnical Data

- A The total of all fines fractions. This flag is used to report total fines when only sieve analysis is requested and balances total grain size with sample weight.
- F Samples were frozen prior to particle size determination
- SM Sample matrix was not appropriate for the requested analysis. This normally refers to samples contaminated with an organic product that interferes with the sieving process and/or moisture content, porosity and saturation calculations
- SS Sample did not contain the proportion of "fines" required to perform the pipette portion of the grain size analysis
- W Weight of sample in some pipette aliquots was below the level required for accurate weighting



ORGANICS ANALYSIS DATA SHEET
PSDDA PCB by GC/ECD
Extraction Method: SW3546
Page 1 of 1

Sample ID: MB-091615
METHOD BLANK

Lab Sample ID: MB-091615
LIMS ID: 15-16384
Matrix: Soil
Data Release Authorized: *MW*
Reported: 09/17/15

Date Extracted: 09/16/15
Date Analyzed: 09/16/15 18:30
Instrument/Analyst: ECD7/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

QC Report No: AMN4-Jorgensen Forge
Project: JFOS3

Date Sampled: NA
Date Received: NA

Sample Amount: 5.00 g
Final Extract Volume: 5.00 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: NA

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	20	< 20 U
53469-21-9	Aroclor 1242	20	< 20 U
12672-29-6	Aroclor 1248	20	< 20 U
11097-69-1	Aroclor 1254	20	< 20 U
11096-82-5	Aroclor 1260	20	< 20 U
11104-28-2	Aroclor 1221	20	< 20 U
11141-16-5	Aroclor 1232	20	< 20 U
37324-23-5	Aroclor 1262	20	< 20 U
11100-14-4	Aroclor 1268	20	< 20 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	94.8%
Tetrachlorometaxylene	99.5%



ORGANICS ANALYSIS DATA SHEET
PSDDA PCB by GC/ECD
Extraction Method: SW3546
Page 1 of 1

Sample ID: CMP12-B08-1+06
SAMPLE

Lab Sample ID: AMN4A
LIMS ID: 15-16384
Matrix: Soil
Data Release Authorized: *MW*
Reported: 09/17/15

QC Report No: AMN4-Jorgensen Forge
Project: JFOS3

Date Sampled: 09/15/15
Date Received: 09/16/15

Sample Amount: 5.43 g-dry-wt
Final Extract Volume: 5.00 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 23.0%

Date Extracted: 09/16/15
Date Analyzed: 09/16/15 19:13
Instrument/Analyst: ECD7/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	18	< 18 U
53469-21-9	Aroclor 1242	18	< 18 U
12672-29-6	Aroclor 1248	18	< 18 U
11097-69-1	Aroclor 1254	18	< 18 U
11096-82-5	Aroclor 1260	18	< 18 U
11104-28-2	Aroclor 1221	18	< 18 U
11141-16-5	Aroclor 1232	18	< 18 U
37324-23-5	Aroclor 1262	18	< 18 U
11100-14-4	Aroclor 1268	18	< 18 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	85.0%
Tetrachlorometaxylene	92.5%



ORGANICS ANALYSIS DATA SHEET
PSDDA PCB by GC/ECD
Extraction Method: SW3546
Page 1 of 1

Sample ID: CMP24-B09-1+05
SAMPLE

Lab Sample ID: AMN4B
LIMS ID: 15-16385
Matrix: Soil
Data Release Authorized: *MW*
Reported: 09/17/15

QC Report No: AMN4-Jorgensen Forge
Project: JFOS3

Date Sampled: 09/15/15
Date Received: 09/16/15

Sample Amount: 5.11 g-dry-wt
Final Extract Volume: 5.00 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 27.2%

Date Extracted: 09/16/15
Date Analyzed: 09/16/15 19:34
Instrument/Analyst: ECD7/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

CAS Number	Analyte	LOQ	Result
12674-11-2	Aroclor 1016	20	< 20 U
53469-21-9	Aroclor 1242	20	< 20 U
12672-29-6	Aroclor 1248	59	< 59 Y
11097-69-1	Aroclor 1254	20	360
11096-82-5	Aroclor 1260	20	66
11104-28-2	Aroclor 1221	20	< 20 U
11141-16-5	Aroclor 1232	20	< 20 U
37324-23-5	Aroclor 1262	20	< 20 U
11100-14-4	Aroclor 1268	20	< 20 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	78.0%
Tetrachlorometaxylene	84.2%



SW8082/PCB SOIL/SOLID/SEDIMENT SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: AMN4-Jorgensen Forge
Project: JFOS3

Client ID	DCBP	DCBP	TCMX	TCMX	TOT OUT
	% REC	LCL-UCL	% REC	LCL-UCL	
MB-091615	94.8%	40-133	99.5%	53-120	0
LCS-091615	95.8%	40-133	110%	53-120	0
CMP12-B08-1+06	85.0%	40-133	92.5%	53-120	0
CMP24-B09-1+05	78.0%	40-133	84.2%	53-120	0

Microwave (MARS) Control Limits PCBSMP

Prep Method: SW3546

Log Number Range: 15-16384 to 15-16385



ORGANICS ANALYSIS DATA SHEET
PSDDA PCB by GC/ECD
Page 1 of 1

Sample ID: LCS-091615
LAB CONTROL

Lab Sample ID: LCS-091615
LIMS ID: 15-16384
Matrix: Soil
Data Release Authorized: **WW**
Reported: 09/17/15

Date Extracted: 09/16/15
Date Analyzed: 09/16/15 18:52
Instrument/Analyst: ECD7/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

QC Report No: AMN4-Jorgensen Forge
Project: JFOS3

Date Sampled: NA
Date Received: NA

Sample Amount: 5.00 g-dry-wt
Final Extract Volume: 5.00 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: NA

Analyte	Lab Control	Spike Added	Recovery
Aroclor 1016	538	500	108%
Aroclor 1260	497	500	99.4%

PCB Surrogate Recovery

Decachlorobiphenyl	95.8%
Tetrachlorometaxylene	110%

Results reported in µg/kg (ppb)

4
PCB METHOD BLANK SUMMARY

BLANK NO.

AMN4MBS1

Lab Name: ANALYTICAL RESOURCES INC

Client: JORGENSEN FORGE

ARI Job No.: AMN4

Project: JFOS3

Lab Sample ID: AMN4MBS1

Lab File ID: 09161530

Date Extracted: 09/16/15

Matrix: SOLID

Date Analyzed: 09/16/15

Instrument ID: ECD7

Time Analyzed: 1830

GC Columns: ZB5/ZB35

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED
01	AMN4LCSS1	AMN4LCSS1	09/16/15
02	CMP12-B08-1+06	AMN4A	09/16/15
03	CMP24-B09-1+05	AMN4B	09/16/15

ALL RUNS ARE DUAL COLUMN

6F
8082 INITIAL CALIBRATION OF AROCLOR 1016/1260

Lab Name: ANALYTICAL RESOURCES INC

Client: JORGENSEN FORGE

ARI Job No.: AMN4

Project: JFOS3

GC Column: ZB5

Instrument ID: ECD7

Calibration Date: 08/03/15

SURROGATES

	RT WIN	LVL1	LVL2	LVL3	LVL4	LVL5	LVL6	MEAN	%RSD
TCX	6.17- 6.37	0.4595	0.5114	0.5438	0.5434	0.5583	0.5704	0.5312	7.6
DCB	14.74-14.94	1.7111	1.7198	1.4821	1.4035	1.2882	1.3482	1.4921	12.4

	Aroclor-1016	LVL1	LVL2	LVL3	LVL4	LVL5	LVL6	MEAN	%RSD
Peak	RT WIN	.02	0.05	0.1	.25	0.5	1.0		R^2
1	8.17- 8.37	0.0127	0.0137	0.0140	0.0130	0.0125	0.0119	0.0129	6.0
2	8.66- 8.86	0.0388	0.0418	0.0425	0.0396	0.0390	0.0384	0.0400	4.3
3	8.96- 9.16	0.0123	0.0144	0.0149	0.0140	0.0138	0.0134	0.0138	6.5
4	9.75- 9.95	0.0139	0.0149	0.0160	0.0148	0.0146	0.0141	0.0147	4.9

AROCLOR AVERAGE %RSD = 5.4

	Aroclor-1260	LVL1	LVL2	LVL3	LVL4	LVL5	LVL6	MEAN	%RSD
Peak	RT WIN	.02	0.05	0.1	.25	0.5	1.0		R^2
1	12.30-12.50	0.0491	0.0528	0.0511	0.0511	0.0472	0.0497	0.0502	3.9
2	12.98-13.18	0.1300	0.1509	0.1533	0.1635	0.1585	0.1747	0.1551	9.6
3	13.35-13.55	0.0548	0.0622	0.0625	0.0650	0.0614	0.0659	0.0620	6.4
4	13.45-13.65	0.0356	0.0404	0.0408	0.0424	0.0400	0.0425	0.0403	6.3
5	13.86-14.06	0.0162	0.0197	0.0199	0.0205	0.0194	0.0207	0.0194	8.4

AROCLOR AVERAGE %RSD = 6.9

6F
8082 INITIAL CALIBRATION OF AROCLOR 1016/1260

Lab Name: ANALYTICAL RESOURCES INC

Client: JORGENSEN FORGE

ARI Job No.: AMN4

Project: JFOS3

GC Column: ZB35

Instrument ID: ECD7

Calibration Date: 08/03/15

SURROGATES

	RT WIN	LVL1	LVL2	LVL3	LVL4	LVL5	LVL6	MEAN	%RSD
TCX	6.55- 6.75	0.9749	1.0337	1.0794	1.0345	1.0222	0.9958	1.0234	3.5
DCB	15.22-15.42	1.1059	1.0972	1.1143	1.0244	1.0035	0.9886	1.0556	5.3

	Aroclor-1016	LVL1	LVL2	LVL3	LVL4	LVL5	LVL6	MEAN	%RSD
Peak	RT WIN	.02	0.05	0.1	.25	0.5	1.0		R^2
1	8.67- 8.87	0.0481	0.0478	0.0466	0.0414	0.0386	0.0357	0.0430	12.2
2	9.38- 9.58	0.0957	0.0955	0.0955	0.0864	0.0833	0.0792	0.0893	8.2
3	9.80-10.00	0.0250	0.0256	0.0255	0.0230	0.0217	0.0205	0.0236	9.1
4	10.35-10.55	0.0339	0.0347	0.0339	0.0302	0.0285	0.0267	0.0313	10.5

AROCLOR AVERAGE %RSD = 10.0

	Aroclor-1260	LVL1	LVL2	LVL3	LVL4	LVL5	LVL6	MEAN	%RSD
Peak	RT WIN	.02	0.05	0.1	.25	0.5	1.0		R^2
1	12.90-13.10	0.0940	0.0922	0.0897	0.0799	0.0745	0.0713	0.0836	11.5
2	13.56-13.76	0.1992	0.2005	0.1998	0.1867	0.1792	0.1768	0.1904	5.7
3	13.99-14.19	0.0651	0.0649	0.0637	0.0574	0.0536	0.0519	0.0594	10.0
4	14.04-14.24	0.1332	0.1340	0.1333	0.1212	0.1155	0.1129	0.1250	7.7

AROCLOR AVERAGE %RSD = 8.7

6G
8082 INITIAL CALIBRATION OF SINGLE POINT PCBs

Lab Name: ANALYTICAL RESOURCES INC

Client: JORGENSEN FORGE

ARI Job No.: AMN4

Project: JFOS3

GC Column: ZB5

Instrument ID: ECD7

Calibration Date: 08/03/15

Aroclor-1221			
Peak	RT	RT WIN	Cal Factor
1	4.946	4.85- 5.05	0.00300
2	6.923	6.82- 7.02	0.00486
3	7.047	6.95- 7.15	0.01455

Aroclor-1232			
Peak	RT	RT WIN	Cal Factor
1	4.946	4.85- 5.05	0.00172
2	7.046	6.95- 7.15	0.00980
3	8.759	8.66- 8.86	0.01696
4	9.658	9.56- 9.76	0.00541

Aroclor-1242			
Peak	RT	RT WIN	Cal Factor
1	8.765	8.67- 8.87	0.03076
2	9.063	8.96- 9.16	0.01109
3	10.298	10.20-10.40	0.01405
4	10.544	10.44-10.64	0.01578

Aroclor-1248			
Peak	RT	RT WIN	Cal Factor
1	9.403	9.30- 9.50	0.00882
2	9.848	9.75- 9.95	0.02086
3	10.297	10.20-10.40	0.02446
4	10.542	10.44-10.64	0.02496

6G
8082 INITIAL CALIBRATION OF SINGLE POINT PCBs

Lab Name: ANALYTICAL RESOURCES INC

Client: JORGENSEN FORGE

ARI Job No.: AMN4

Project: JFOS3

GC Column: ZB5

Instrument ID: ECD7

Calibration Date: 08/03/15

Aroclor-1254			
Peak	RT	RT WIN	Cal Factor
1	10.305	10.21-10.41	0.01523
2	10.626	10.53-10.73	0.02246
3	11.007	10.91-11.11	0.01795
4	11.144	11.04-11.24	0.03393
5	11.858	11.76-11.96	0.02473

Aroclor-1262			
Peak	RT	RT WIN	Cal Factor
1	12.408	12.31-12.51	0.10383
2	13.085	12.99-13.19	0.27054
3	13.461	13.36-13.56	0.07188
4	13.625	13.52-13.72	0.12224
5	14.171	14.07-14.27	0.10332

Aroclor-1268			
Peak	RT	RT WIN	Cal Factor
1	13.561	13.46-13.66	0.24308
2	13.623	13.52-13.72	0.23035
3	13.949	13.85-14.05	0.20684
4	14.555	14.46-14.66	0.63060

6G
8082 INITIAL CALIBRATION OF SINGLE POINT PCBs

Lab Name: ANALYTICAL RESOURCES INC

Client: JORGENSEN FORGE

ARI Job No.: AMN4

Project: JFOS3

GC Column: ZB35

Instrument ID: ECD7

Calibration Date: 08/03/15

Aroclor-1221			
Peak	RT	RT WIN	Cal Factor
1	5.744	5.64- 5.84	0.00821
2	7.471	7.37- 7.57	0.01368
3	7.773	7.67- 7.87	0.00799
4	7.913	7.81- 8.01	0.02412

Aroclor-1232			
Peak	RT	RT WIN	Cal Factor
1	5.744	5.64- 5.84	0.00506
2	7.912	7.81- 8.01	0.01726
3	8.762	8.66- 8.86	0.01985
4	9.890	9.79- 9.99	0.01037

Aroclor-1242			
Peak	RT	RT WIN	Cal Factor
1	8.775	8.67- 8.87	0.03253
2	9.481	9.38- 9.58	0.06762
3	10.902	10.80-11.00	0.02930
4	11.343	11.24-11.44	0.02943

Aroclor-1248			
Peak	RT	RT WIN	Cal Factor
1	9.470	9.37- 9.57	0.04417
2	10.446	10.35-10.55	0.03719
3	10.980	10.88-11.08	0.03822
4	11.341	11.24-11.44	0.04818

6G
8082 INITIAL CALIBRATION OF SINGLE POINT PCBs

Lab Name: ANALYTICAL RESOURCES INC

Client: JORGENSEN FORGE

ARI Job No.: AMN4

Project: JFOS3

GC Column: ZB35

Instrument ID: ECD7

Calibration Date: 08/03/15

Aroclor-1254			
Peak	RT	RT WIN	Cal Factor
1	11.213	11.11-11.31	0.04173
2	11.311	11.21-11.41	0.01974
3	11.750	11.65-11.85	0.03299
4	11.902	11.80-12.00	0.06503
5	12.681	12.58-12.78	0.04305

Aroclor-1262			
Peak	RT	RT WIN	Cal Factor
1	12.993	12.89-13.09	0.15518
2	13.428	13.33-13.53	0.14324
3	13.656	13.56-13.76	0.29125
4	14.091	13.99-14.19	0.12507
5	14.686	14.59-14.79	0.09594

Aroclor-1268			
Peak	RT	RT WIN	Cal Factor
1	14.090	13.99-14.19	0.21797
2	14.144	14.04-14.24	0.20396
3	14.454	14.35-14.55	0.16487
4	15.033	14.93-15.13	0.46628

7F
PCB CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES INC

Client: JORGENSEN FORGE

ARI Job No.: AMN4

Project: JFOS3

GC Column: ZB5

Instrument: ECD7

Init. Calib. Date: 08/03/15

Date Analyzed : 09/16/15

Lab Standard ID: AR1254

Time Analyzed : 1748

COMPOUND/PEAK NO.	RT	RT WINDOW FROM	WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
Aroclor-1254-1	10.31	10.21	10.41	251.6	250.0	0.6
Aroclor-1254-2	10.63	10.53	10.73	276.7	250.0	10.7
Aroclor-1254-3	11.01	10.91	11.11	288.7	250.0	15.5
Aroclor-1254-4	11.14	11.04	11.24	286.9	250.0	14.8
Aroclor-1254-5	11.86	11.76	11.96	272.1	250.0	8.8

AROCLOR AVG: 275.2 CAL %D = 10.1

7F
PCB CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES INC

Client: JORGENSEN FORGE

ARI Job No.: AMN4

Project: JFOS3

GC Column: ZB5

Instrument: ECD7

Init. Calib. Date: 08/03/15

Date Analyzed :09/16/15

Lab Standard ID: AR1660

Time Analyzed :1809

COMPOUND/PEAK NO.	RT	RT WINDOW FROM	TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
Aroclor-1016-1	8.27	8.17	8.37	245.0	250.0	-2.0
Aroclor-1016-2	8.76	8.66	8.86	243.9	250.0	-2.4
Aroclor-1016-3	9.06	8.96	9.16	248.8	250.0	-0.5
Aroclor-1016-4	9.85	9.75	9.95	253.1	250.0	1.2

AROCLOR AVG: 247.7 CAL %D = -0.9

Date Analyzed :09/16/15

Lab Standard ID: AR1660

Time Analyzed :1809

COMPOUND/PEAK NO.	RT	RT WINDOW FROM	TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
Aroclor-1260-1	12.40	12.30	12.50	266.3	250.0	6.5
Aroclor-1260-2	13.08	12.98	13.18	261.9	250.0	4.8
Aroclor-1260-3	13.45	13.35	13.55	260.3	250.0	4.1
Aroclor-1260-4	13.56	13.45	13.65	255.4	250.0	2.2
Aroclor-1260-5	13.96	13.86	14.06	260.6	250.0	4.2

AROCLOR AVG: 260.9 CAL %D = 4.4

7F
PCB CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES INC

Client: JORGENSEN FORGE

ARI Job No.: AMN4

Project: JFOS3

GC Column: ZB5

Instrument: ECD7

Init. Calib. Date: 08/03/15

Date Analyzed :09/16/15

Lab Standard ID: AR1248

Time Analyzed :1956

COMPOUND/PEAK NO.	RT	RT WINDOW FROM	TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
Aroclor-1248-1	9.40	9.30	9.50	262.5	250.0	5.0
Aroclor-1248-2	9.85	9.75	9.95	265.7	250.0	6.3
Aroclor-1248-3	10.30	10.20	10.40	261.6	250.0	4.6
Aroclor-1248-4	10.54	10.44	10.64	270.6	250.0	8.2

AROCLOR AVG: 265.1 CAL %D = 6.0

7F
PCB CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES INC

Client: JORGENSEN FORGE

ARI Job No.: AMN4

Project: JFOS3

GC Column: ZB5

Instrument: ECD7

Init. Calib. Date: 08/03/15

Date Analyzed :09/16/15

Lab Standard ID: AR1660

Time Analyzed :2017

COMPOUND/PEAK NO.	RT	RT WINDOW FROM	TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
Aroclor-1016-1	8.27	8.17	8.37	244.1	250.0	-2.3
Aroclor-1016-2	8.76	8.66	8.86	242.6	250.0	-3.0
Aroclor-1016-3	9.06	8.96	9.16	247.4	250.0	-1.0
Aroclor-1016-4	9.85	9.75	9.95	250.2	250.0	0.1

AROCLOR AVG: 246.1 CAL %D = -1.6

Date Analyzed :09/16/15

Lab Standard ID: AR1660

Time Analyzed :2017

COMPOUND/PEAK NO.	RT	RT WINDOW FROM	TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
Aroclor-1260-1	12.40	12.30	12.50	267.7	250.0	7.1
Aroclor-1260-2	13.08	12.98	13.18	262.9	250.0	5.1
Aroclor-1260-3	13.45	13.35	13.55	261.8	250.0	4.7
Aroclor-1260-4	13.55	13.45	13.65	256.7	250.0	2.7
Aroclor-1260-5	13.96	13.86	14.06	259.2	250.0	3.7

AROCLOR AVG: 261.6 CAL %D = 4.7

7F
PCB CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES INC

Client: JORGENSEN FORGE

ARI Job No.: AMN4

Project: JFOS3

GC Column: ZB35

Instrument: ECD7

Init. Calib. Date: 08/03/15

Date Analyzed :09/16/15

Lab Standard ID: AR1254

Time Analyzed :1748

COMPOUND/PEAK NO.	RT	RT WINDOW FROM	TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
Aroclor-1254-1	11.21	11.11	11.31	246.1	250.0	-1.6
Aroclor-1254-2	11.31	11.21	11.41	250.0	250.0	0.0
Aroclor-1254-3	11.75	11.65	11.85	252.3	250.0	0.9
Aroclor-1254-4	11.90	11.80	12.00	246.6	250.0	-1.4
Aroclor-1254-5	12.68	12.58	12.78	243.6	250.0	-2.5

AROCLOR AVG: 247.7 CAL %D = -0.9

7F
PCB CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES INC

Client: JORGENSEN FORGE

ARI Job No.: AMN4

Project: JFOS3

GC Column: ZB35

Instrument: ECD7

Init. Calib. Date: 08/03/15

Date Analyzed :09/16/15

Lab Standard ID: AR1660

Time Analyzed :1809

COMPOUND/PEAK NO.	RT	RT WINDOW FROM	TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
Aroclor-1016-1	8.77	8.67	8.87	235.7	250.0	-5.7
Aroclor-1016-2	9.48	9.38	9.58	240.9	250.0	-3.6
Aroclor-1016-3	9.90	9.80	10.00	244.8	250.0	-2.1
Aroclor-1016-4	10.45	10.35	10.55	188.0	250.0	-24.8

AROCLOR AVG: 227.3 CAL %D = -9.1

Date Analyzed :09/16/15

Lab Standard ID: AR1660

Time Analyzed :1809

COMPOUND/PEAK NO.	RT	RT WINDOW FROM	TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
Aroclor-1260-1	12.99	12.90	13.10	222.9	250.0	-10.8
Aroclor-1260-2	13.66	13.56	13.76	224.8	250.0	-10.1
Aroclor-1260-3	14.09	13.99	14.19	221.1	250.0	-11.5
Aroclor-1260-4	14.14	14.04	14.24	224.4	250.0	-10.2

AROCLOR AVG: 223.3 CAL %D = -10.7

7F
PCB CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES INC

Client: JORGENSEN FORGE

ARI Job No.: AMN4

Project: JFOS3

GC Column: ZB35

Instrument: ECD7

Init. Calib. Date: 08/03/15

Date Analyzed :09/16/15

Lab Standard ID: AR1248

Time Analyzed :1956

COMPOUND/PEAK NO.	RT	RT WINDOW FROM	TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
Aroclor-1248-1	9.47	9.37	9.57	241.3	250.0	-3.5
Aroclor-1248-2	10.45	10.35	10.55	191.3	250.0	-23.5
Aroclor-1248-3	10.98	10.88	11.08	234.5	250.0	-6.2
Aroclor-1248-4	11.34	11.24	11.44	231.7	250.0	-7.3

AROCLOR AVG: 224.7 CAL %D = -10.1

7F
PCB CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES INC

Client: JORGENSEN FORGE

ARI Job No.: AMN4

Project: JFOS3

GC Column: ZB35

Instrument: ECD7

Init. Calib. Date: 08/03/15

Date Analyzed :09/16/15

Lab Standard ID: AR1660

Time Analyzed :2017

COMPOUND/PEAK NO.	RT	RT WINDOW FROM	TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
Aroclor-1016-1	8.77	8.67	8.87	234.7	250.0	-6.1
Aroclor-1016-2	9.48	9.38	9.58	239.4	250.0	-4.2
Aroclor-1016-3	9.90	9.80	10.00	242.5	250.0	-3.0
Aroclor-1016-4	10.45	10.35	10.55	187.5	250.0	-25.0

AROCLOR AVG: 226.0 CAL %D = -9.6

Date Analyzed :09/16/15

Lab Standard ID: AR1660

Time Analyzed :2017

COMPOUND/PEAK NO.	RT	RT WINDOW FROM	TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
Aroclor-1260-1	13.00	12.90	13.10	223.0	250.0	-10.8
Aroclor-1260-2	13.66	13.56	13.76	223.2	250.0	-10.7
Aroclor-1260-3	14.09	13.99	14.19	211.9	250.0	-15.2
Aroclor-1260-4	14.14	14.04	14.24	215.3	250.0	-13.9

AROCLOR AVG: 218.3 CAL %D = -12.7

FORM 8
PCB INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ANALYTICAL RESOURCES INC

Client: JORGENSEN FORGE

ARI Job No.: AMN4

Project: JFOS3

GC Column: ZB5

ID: 0.53 (mm)

Instrument ID: ECD7

Init. Calib. Date: 08/03/15

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS,
SAMPLES, AND STANDARDS IS GIVEN BELOW:

				IS1 AREA	RT	IS2 AREA	RT
		ICAL MIDPT		6328212	3.263	5068453	15.102
		UPPER LIMIT		12656424	3.363	10136906	15.202
		LOWER LIMIT		3164106	3.163	2534226	15.002
CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME	IS1 AREA	RT	IS2 AREA	RT
01 ZZZZZ	ZZZZZ	08/03/15	1716	6222621	3.258	5047030	15.102
02	0.25PPMAR166	08/03/15	1737	6328212	3.263	5068453	15.102
03	0.02PPMAR166	08/03/15	1758	6326177	3.262	5154907	15.102
04	0.05PPMAR166	08/03/15	1820	6210580	3.264	5033371	15.102
05	1PPMAR1660	08/03/15	1841	6160991	3.266	4985647	15.103
06	0.1PPMAR1660	08/03/15	1902	6344317	3.268	5407220	15.103
07	0.5PPMAR1660	08/03/15	1924	6159955	3.267	5303929	15.103
08	AR1242	08/03/15	1945	6219986	3.265	5066767	15.103
09	AR1248	08/03/15	2007	6249050	3.265	5356854	15.103
10	AR1254	08/03/15	2028	6326911	3.267	5032449	15.103
11	AR2162	08/03/15	2049	6246099	3.266	4938617	15.103
12	AR3268	08/03/15	2111	6259531	3.265	5003661	15.103
13 ZZZZZ	ZZZZZ	08/03/15	2132	6338133	3.267	5037306	15.103
14 ZZZZZ	ZZZZZ	08/03/15	2153	6038309	3.262	5048403	15.103
15 ZZZZZ	ZZZZZ	08/03/15	2214	6208035	3.265	5032536	15.103
16 ZZZZZ	ZZZZZ	08/03/15	2236	6278544	3.265	5100405	15.103
17 ZZZZZ	ZZZZZ	08/03/15	2257	6251565	3.264	5061467	15.103
18 ZZZZZ	ZZZZZ	08/03/15	2318	6317415	3.264	5061451	15.102
19	AR1254	09/16/15	1748	8332316	3.276	6114042	15.095
20	AR1660	09/16/15	1809	7718631	3.276	5947572	15.096
21 AMN4MBS1	AMN4MBS1	09/16/15	1830	7435613	3.276	6031448	15.096
22 AMN4LCSS1	AMN4LCSS1	09/16/15	1852	7527245	3.276	6270571	15.096
23 CMP12-B08-1+	AMN4A	09/16/15	1913	7486654	3.277	5319612	15.096
24 CMP24-B09-1+	AMN4B	09/16/15	1934	7244747	3.278	5350231	15.096
25	AR1248	09/16/15	1956	9297700	3.277	6698333	15.095
26	AR1660	09/16/15	2017	7803653	3.273	5858831	15.096

IS1 = 1-Bromo-2-Nitrobenzene RT Window = RT +/- 0.1 min

IS2 = Hexabromobiphenyl

* Indicates value outside QC Limits

FORM 8
PCB INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ANALYTICAL RESOURCES INC

Client: JORGENSEN FORGE

ARI Job No.: AMN4

Project: JFOS3

GC Column: ZB35

ID: 0.53 (mm)

Instrument ID: ECD7

Init. Calib. Date: 08/03/15

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS,
SAMPLES, AND STANDARDS IS GIVEN BELOW:

				IS1 AREA	RT	IS2 AREA	RT
		ICAL MIDPT	12901249	4.365	7598346	15.906	
		UPPER LIMIT	25802498	4.465	15196692	16.006	
		LOWER LIMIT	6450624	4.265	3799173	15.806	
CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME	IS1 AREA	RT	IS2 AREA	RT
01 ZZZZZ	ZZZZZ	08/03/15	1716	12615423	4.360	7577981	15.906
02	0.25PPMAR166	08/03/15	1737	12901249	4.365	7598346	15.906
03	0.02PPMAR166	08/03/15	1758	12889538	4.366	7674080	15.906
04	0.05PPMAR166	08/03/15	1820	12701605	4.367	7596138	15.906
05	1PPMAR1660	08/03/15	1841	12722963	4.369	7648810	15.907
06	0.1PPMAR1660	08/03/15	1902	13013744	4.371	7786984	15.907
07	0.5PPMAR1660	08/03/15	1924	12706249	4.370	7776969	15.907
08	AR1242	08/03/15	1945	12825517	4.369	7804063	15.906
09	AR1248	08/03/15	2007	12932061	4.369	7871936	15.906
10	AR1254	08/03/15	2028	13098041	4.370	7793570	15.907
11	AR2162	08/03/15	2049	12808024	4.369	7735916	15.907
12	AR3268	08/03/15	2111	12831845	4.369	7828166	15.907
13 ZZZZZ	ZZZZZ	08/03/15	2132	13048327	4.369	7840797	15.907
14 ZZZZZ	ZZZZZ	08/03/15	2153	12451023	4.366	7728754	15.907
15 ZZZZZ	ZZZZZ	08/03/15	2214	12732082	4.367	7695088	15.907
16 ZZZZZ	ZZZZZ	08/03/15	2236	12892489	4.368	7804248	15.906
17 ZZZZZ	ZZZZZ	08/03/15	2257	12666986	4.367	7848857	15.907
18 ZZZZZ	ZZZZZ	08/03/15	2318	12781896	4.367	7841933	15.907
19	AR1254	09/16/15	1748	14323070	4.384	9069058	15.906
20	AR1660	09/16/15	1809	13425287	4.385	8445720	15.906
21 AMN4MBS1	AMN4MBS1	09/16/15	1830	20058790	4.385	8372226	15.906
22 AMN4LCSS1	AMN4LCSS1	09/16/15	1852	14421797	4.387	8504249	15.907
23 CMP12-B08-1+ AMN4A		09/16/15	1913	16568472	4.386	7207119	15.905
24 CMP24-B09-1+ AMN4B		09/16/15	1934	16182103	4.387	7122036	15.906
25	AR1248	09/16/15	1956	15831175	4.387	8985672	15.906
26	AR1660	09/16/15	2017	13587616	4.384	7983061	15.906

IS1 = 1-Bromo-2-Nitrobenzene RT Window = RT +/- 0.1 min

IS2 = Hexabromobiphenyl

* Indicates value outside QC Limits